

Project type: Civil

Project Title: Gardiner Expressway Corridor Study

Team Members: Azadeh N Heydari, Jinesh Patel, Junior Memaj, Milos Kovac

Team Name: J2MA Engineering Group

Project Description:

The Frederick G. Gardiner Expressway is a heavily used municipal expressway in Toronto, Canada. It spans approximately 18km east to west, connecting Toronto's downtown core to its western wards and neighbouring cities. The elevated section of the expressway is approaching the end of its service life and as a result the City of Toronto has expressed the need for its remediation. J2MA engineering has presented a unique solution based on several constraints such as budget, time, on-going traffic and environmental and social impacts.

Team photo -

Project type: Civil

Project Title: Immediate Bridge Disaster Response Structural System

Team Name: PSSH Inc.

Team Members: Shahzal Nisar, Syed Raza, Haris Arian, Prince Oguejiofor

Project Description:

As part of its disaster management strategy, the Ministry of Transportation Ontario (MTO) has identified the need for developing an immediate bridge disaster response structural system in case of emergencies like earthquakes, explosions, fires, accidents, and terrorist attacks that result in damage to bridge structures. PSSH Inc. has developed a temporary modular bridge system that can be efficiently deployed across the 400 Series Highway corridors to provide immediate traffic access to adjacent communities in case of disaster. The design includes modular pieces and their connections

Team photo –

Project type: Civil

Project Title: Rehabilitation of the Conestogo Dam

Team members: Sahil Chaudhary, Marjuk Mahfuz, Faraz Forghani, Yazan Chaban

Team Name: GeoStructures Solutions

Project Description:

GeoStructures Solutions has been retained by the Grand River Authority to conduct a condition survey and rehabilitation analysis, along with a hydrological analysis, on the Conestogo Dam. Conestogo dam is among a series of dams built within the Grand System Watershed. The dam's purpose is to control spring floods in the Conestoga River, in addition to the runoff from Conestoga Lake.

Team photo –

Project type: Civil

Project Title: Design and Development of a Construction Method for an Eco-resort in Flower Station, Ontario

Team Members: Winston Chen, Ze Feng Zhang, Yan Song Bai, Andrew Lim

Team Name: WEBA Engineers

Project Description:

The intent of this project is to design the structural system, construction procedure and building energy system of the proposed eco-resort in Flower Station, Ontario. Innovative building systems and construction methods that comply with the requirements and constraints are researched and developed. Alternative design solutions are evaluated and the feasible, economically efficient and environmentally friendly design approach is recommended. Detailed design includes the structural framework and construction methods of the necessary components of the eco-resort tailored to the recommended solution.

Team logo -

Project type: Civil

Project Title: Waterloo FSAE Chassis

Team Members: Abdulla Jasim, Hyunwoo Tom Lee, Leah Dierker Viik, Shahriyar Saeed

Team Name: Formula Composites Inc

Project Description:

The University of Waterloo is one of the best universities competing in Formula SAE and has won many awards in the past years. The purpose of this project is to design a student formula car chassis that is a hybrid steel tube and carbon fibre structure. This hybrid frame is strong and lightweight and incorporates many aspects of carbon fibre manufacturing and design.

Team logo –

Project type: Civil

Project Title: Prefabricated Collapsible Shelter

Team Members: Juntae Lee, Eldon Ho, Guillaume Hau Fai Tseung, Pilseung Chung, Jan Franssen

Team Name: Global Engineering Ltd.

Project Description:

The team at Global Engineering Ltd. have designed a multi-purpose collapsible shelter. The primary design criteria for this shelter are transport efficiency, ease of deployment and reusability. Thus the idea for a collapsible shelter was formed that satisfies those criteria. The collapsed unit occupies less space during storage and transportation, the shelter is deployed quickly with minimum labour and the shelter can be collapsed and stored for future usage. Moreover the unit is mounted on wheels facilitating towing to the required site.

Team photo -

Project type: Civil

Project Title: Floating Disaster Shelter Structure for Tofino, BC

Team Members: Jae Kim, Trevor Kuepfer, Caroline Kwiatek, Katy Robinson

Team Name: Orange Engineering

Project Description:

Located within Clayoquot Sound on Vancouver Island, the town of Tofino is susceptible to the seismic events found at the Cascadia fault, which is typically followed by a tsunami and flooding. The small town, along with the neighbouring town of Ucluelet receives over one million tourists annually. Orange Engineering has been tasked with the design of a new disaster shelter structure for the town of Tofino, capable of sustaining these potential natural disasters. The design team achieved this with the development of a floating structure.

Team Photo -

Project type: Civil

Project Title: Pedestrian Crossing of the Rideau Canal located at Fifth Avenue and Clegg Street

Team members: Colin Smyth, Melanie Pinto, Daniel Rutkowski

Team Name: InNova Engineering

Project Description:

The city of Ottawa has identified the need for a new pedestrian bridge over the Rideau Canal. The Rideau Canal is a historically significant site; as such InNova Engineering believes that a crossing over the Canal is an opportunity to exercise innovation, and create a landmark bridge, rather than a design solely based off of function. Hence InNova Engineering has undertaken the design of a curved cable stayed bridge. The design utilizes a German FEA program (Sofistik) to model the bridges member sizing and stresses.

Team photo –



Project type: Civil

Project Title: Seismic Design for Typical Nepalese Residential Dwellings

Team Members: Nicholas Charron, Kevan Farrell, Andrew Mostofizadeh, Joshua Tapia

Team Name: Shake & Quake Engineering

Project Description:

Shake and Quake Engineering LLP has been retained by the Government of Nepal to select and design a robust and innovative solution for Nepal's contemporary residential building systems in the face of high seismic activity. After careful analysis and consideration of multiple building systems, the ideal solution was selected and includes a bamboo reinforced concrete frame with concrete block infill and our proprietary TimBoo® floor joists. The following milestone then involved a comprehensive design of the selected alternative.

Team logo



Project type: Civil

Project title: New Hope Community Church

Team Members: Andrei Tchoumatchev, Adam Felinczak, Marcie van Weerdhuizen, Lucas Farrauto

Team Name: A2ML Solutions

Project Description:

Haiti ARISE has identified a need for a church in the South Campus Community in Grand-Goâve, Haiti. A2ML Solutions has developed plans for a central meeting space based on the impact of recent natural disasters and the complexity of building in a developing country. A2ML prioritized the use of traditional Haitian construction and local labour, while implementing modern technical methods and providing shelter during natural disasters. New Hope Community Church will be a landmark in the community, fostering a sense of safety, security, and solidarity.

Team Photo -



From left to right: Lucas Farrauto, Marcie van Weerdhuizen, Adam Felinczak, and Andrei Tchoumatchev

Project type: Civil

Project Title: Strengthening and Reinforcement of the Ying County Wooden Pagoda

Team Members: Yulei Huang, Ka Yiu Yau, Jingwen Cao, Shumin Huang

Team Name: SYCH Solutions Ltd.

Project Description:

Built in 1056, the Ying County Wooden Pagoda is tallest and oldest pagoda among the existing wooden-structures in China. It has been deformed by a thousand years of use, earthquakes, and bombing. In effort to preserve the historic timber architecture and protect the artifacts inside, rehabilitation and strengthening plans were evaluated, and the local repairing method was selected based on the Pagoda's current situation and other criteria. A finite element model was created to perform static analysis in order to select critical sections to repair.

Team photo-

Project type: Civil

Project Title: Proposal to Expand Carl Pollock Hall to Incorporate Engineering Student Space

Team members: Patrick Costello, Harrison Leach, Matthew Whyte, Michael Zwart

Team Name: Prit'near Engineering

Project Description:

Prit'near Engineering has designed an addition to the fourth floor of the existing Carl Pollock Hall structure to incorporate additional student space. Structural and preliminary architectural design was completed for the addition, and the existing structural system was analyzed to determine the level of strengthening that was required to accommodate the new loads.

Team logo – Prit'near Engineering



PRIT'NEAR ENGINEERING

Project type: Civil

Project Title: Fibre-Reinforced Polymer Replacement of the King Street Bridge

Team Members: Kevin McNamara, Dylan Dowling, Gordon Ingham, Bogdan Cristescu

Team Name: Light Speed Engineering

Project Description:

London's derelict King Street crossing is centrally located in the downtown hub and experiences surges of pedestrian traffic each summer. To better serve London residents and to draw attention to public parks, Light Speed Engineering considered several replacement designs with a focus on aesthetics and innovation and now proposes a fibre-reinforced polymer solution. The purpose of this project is to create a comprehensive landmark bridge design using fully plastic members and connections. Key project components include detailed dynamic analysis, connection detailing, and construction staging.

Team photo



Left to Right: Dylan Dowling, Kevin McNamara, Gordon Ingham, Bogdan Cristescu

Team logo:



Project type: Civil

Project Title: Light-Weight Mezzanine Design for the Canadian Museum of History

Team Members: Tony Ju, Elisa Cheung, Karl Gibson, Christian Flores, Emiliano Pineda

Team Name: FJC Engineering

Project Description

The Canadian Museum of History is proposing to expand their interior space for the transformation of the Canada Hall Exhibit by installing a mezzanine structure. It will add functional space for the new exhibits as well as create a visual connection between the displayed artifacts on the mezzanine level and the artifacts on the floor opened below it. Factors that were taken into consideration include self-weight, clearance height, aesthetics, fire resistance, cost, durability, manufacturing time, and environmental impact.

Team Logo:



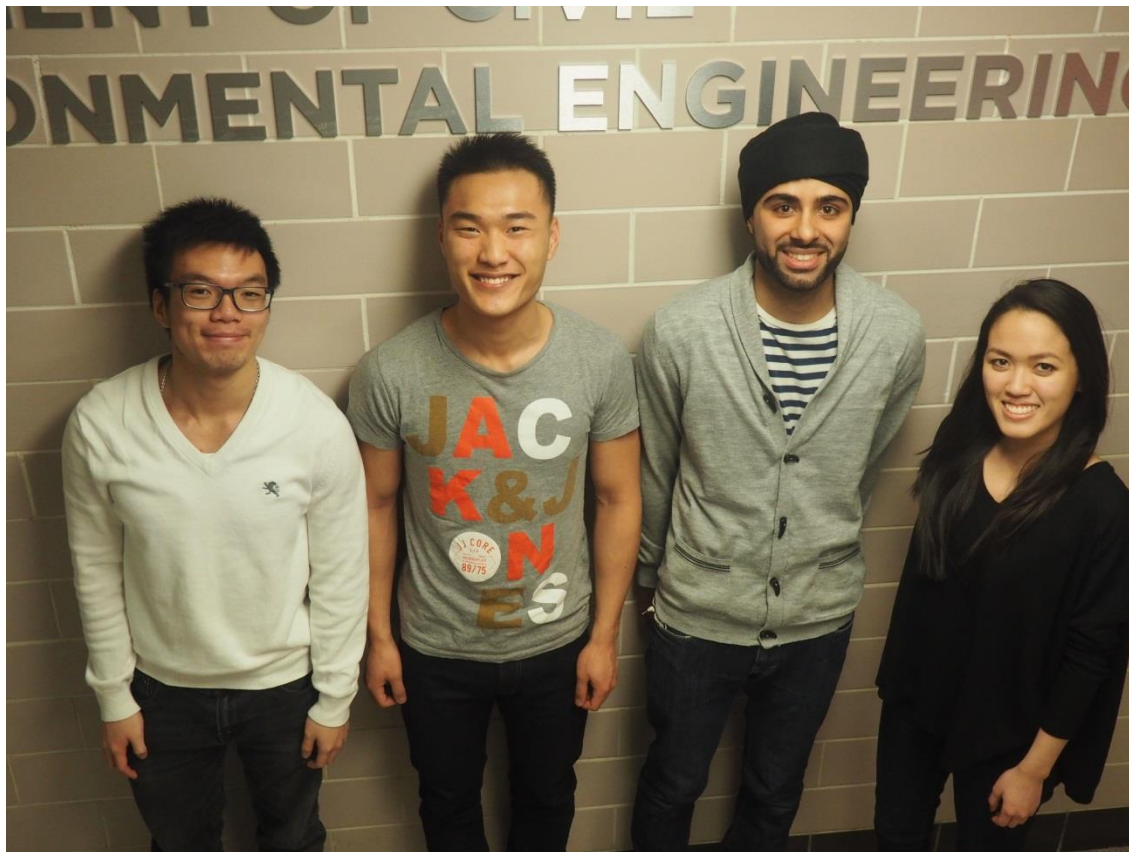
Project type: **Project Title:** Geothermal Heating System for a Bridge Deck
Team members: Annie Nguy, Charles Ho, Pardeep Brar, Victor Diec

Team Name: TerraNova Engineering Ltd

Project Description:

Black ice formation for bridges has traditionally been prevented by the application of salts in Canada. Although this solution is a cost effective method with little upfront capital costs, salt is detrimental to the environment and infrastructure. Geothermal energy is a renewable and environmentally responsible resource that may be used to prevent icing on road surfaces. TerraNova Engineering aims to implement geothermal energy piles to harness the earth's energy and heat the bridge deck.

Team photo –



From left to right: Victor Diec, Charles Ho, Pardeep Brar, Annie Nguy,

Project type: Civil

Project Title: Wilket Creek Restoration Project

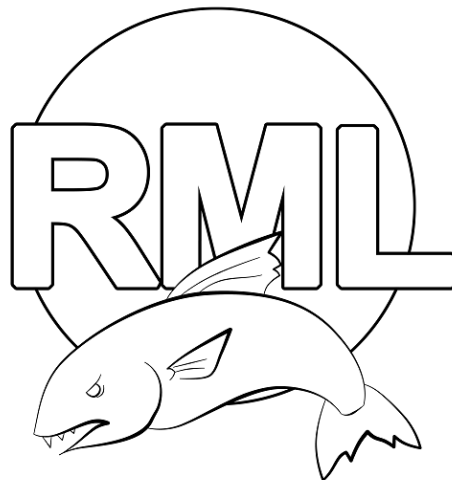
Team Members: Trenton Squair, Alysha Kobylinski, Eddie Sokolowski, Jon De Jong

Team Name: River Monsters Ltd.

Project Description:

Wilket Creek (Toronto, Ontario) experiences high intensity flood events due its urbanized watershed. The large flow during storm events erodes the creek banks and transports large quantities of sediment, creating channel stability and pedestrian safety issues. An innovative engineered solution was investigated to reduce these energy and erosion potentials. Engineered Creek Spurs was the optimal theoretical solution, the streamflow meanders through the alternating spurs, reducing energy potential. Testing and calibration of a scaled model was completed with the use of the University's hydraulic flume.

Team Logo -



Project type: Civil

Project Title: Winterized Post Disaster Shelter

Team members: Grace Sui, Yoo B. Cho, Eric Kohnen, Laura Salazar, Maria Valderrama

Team Name: CVK2S

Project Description:

With the increasing frequency and severity of large scale natural and man-made disasters in the last century, the need for post disaster housing has become more prominent. CVK2S plans to address this need by providing accommodations for those located in cold environments. To provide the best solution possible, CVK2S outlined various key objectives and constraints to guide the design. The design solution of Pneumatic Arch shaped shelter, with an inflatable enclosure that also behaves as the insulation, is proposed and designed by the project team.

Team photo – CVK2S



From left to right: Grace Sui, Eric Kohnen, Laura Salazar, Yoo B. Cho, Maria Valderrama

Project type: Civil

Project Title: Innovating Rainwater Harvesting in South India

Team Members: Chandini Gosine, Majula Koita, Ashita Pradeep, Melani-Ivy Samson

Team Name: Tanked International

Project Description:

Issues surrounding water scarcity are becoming increasingly prevalent. The focus of this project is to ensure the well-being and sustenance of agricultural farmers of South India. Existing pond-like tank structures have the potential to provide sustainable means of storing rainfall and supplying the current and future demand, given rehabilitation and retrofits. For this project, the tanks were redesigned and water retention capabilities were computed using a developed hydrologic metric. Cost effective and innovative techniques were employed, including the use of liners and an injection well.

Team photo -

Project type: Civil

Project Title: Headquarters Shelter System

Team Members: Drew Dutton, Eric Guetter, Shreya Patel, Sean Maiden

Team Name: Tactical Engineering Systems Inc.

Project Description:

The Department of National Defense has identified the need for the design and fabrication of a Headquarters Shelter System to be employed by the Canadian Armed Forces for both domestic and international usage. The structures will serve during military operations “as command posts, medical shelters and temporary accommodation units deployed in austere environments” (Government of Canada, 2015). These shelters must be rapidly constructible, tactically mobile, and includes provisions for an Office Shelter, Planning Shelter, and Operations Shelter.

Team photo -

Project type: Civil

Project Title: Integrated Weather Based Public Transit System in Waterloo

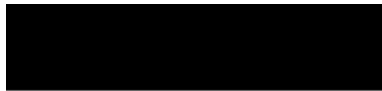
Team Members: Vanessa Cui, Robert Dziurdzik, Allan Wang, Wilson Wang

Team Name: TRIP Engineering

Project Description:

Commuter preferences are highly affected by weather in areas where more than one transportation mode is available. Development of a transit user smartphone app coupled with a transit optimization program takes into consideration of the correlations between weather and bus factors. The optimization program aids the transit operations manager with scheduling and routing options, while the user app provides transit users with the ability to stay up-to-date with the bus and weather information.

Team Logo: Trip Engineering



Project type: Civil

Project Title: Bursting Pipeline Solution

Team Members: Azadeh Tolooshams, Julian Mak, Tianjiao Zhang, Syed Ubaid Ali

Team Name: Tamztech

Project Description:

Underground water pipes burst due to ice expansion when exposed to sub-zero conditions. In response, TamzTech engineered the Double Pipe to provide substantial thermal resistance and protect against expansion bursting. The system is comprised of a flexible inner pipe and a rigid outer pipe, separated by a layer of insulation. With this product, TamzTech intends to eliminate the need to bury pipes below the regional frost depth and all incidentals related to underground pipe bursting

Team logo –



Team Photo:



TamzTech Team (left to right): Syed Ubaid Ali, Tianjiao Zhang, Azadeh Tolooshams, Julian Mak

Project type: Civil

Project Title: Ring Road Revitalization

Team Members: David Birnbaum, Kristen Machina, Tyler Morrison, Kyle Pippel

Team Name: Free the Ring Consulting

Project Description:

The University of Waterloo's Ring Road is "in a terrible state, for automobiles, busses, pedestrians and cyclists alike." Free the Ring Consulting has developed a complete revitalization to bring Waterloo to the forefront of campus transport. The addition of roundabouts, segregated bike lanes, refuge islands and other traffic solutions will not only serve to create a safer campus environment, but will also substantially improve the aesthetics of UW.

Team logo –

Project type: Civil

Project Title: New Amusement Ride at Canada's Wonderland

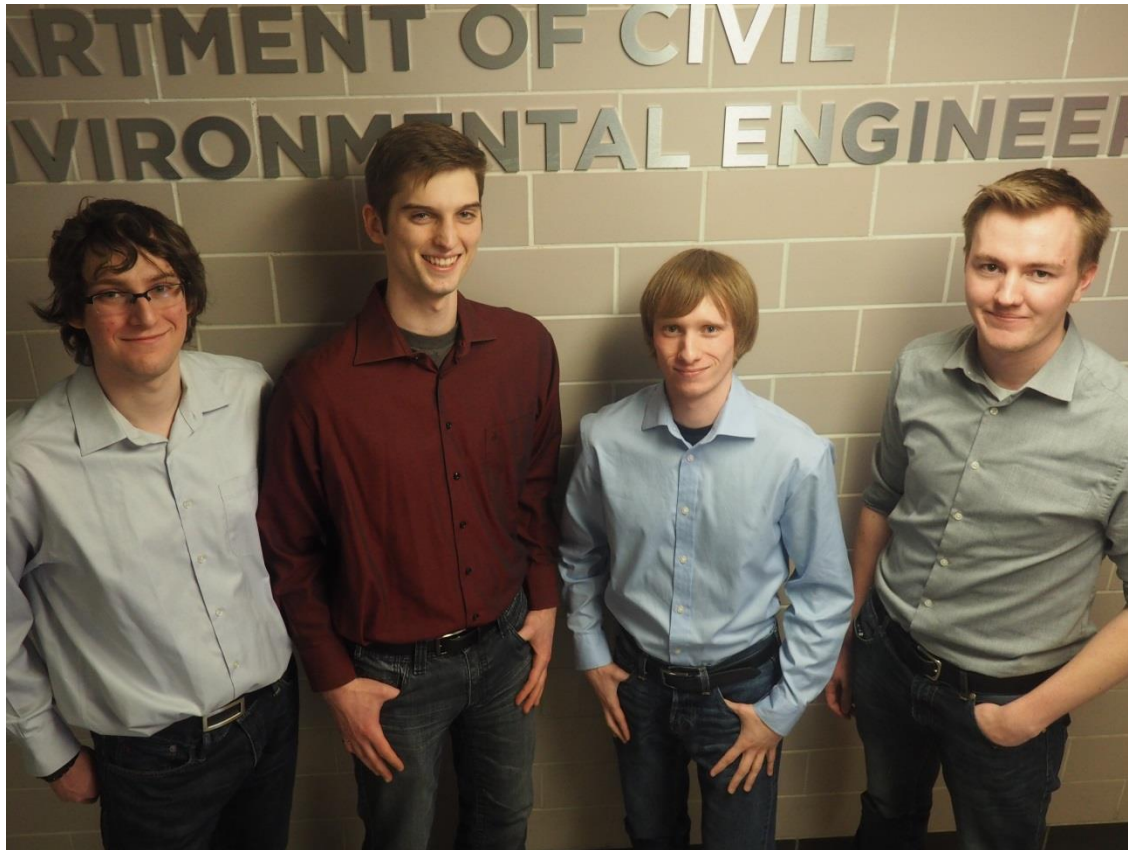
Team members: Stephen Phillips, James St. Onge, Peter Loudfoot, Graeme Milligan

Team Name: Four Flags

Project Description:

In late 2014, a large and outdated roller coaster was removed from Canada's Wonderland in order to accommodate future expansion and the addition of more innovative amusement rides. The design team engaged in the development of a brand new roller coaster concept for the park and carried out a detailed design of the primary structural components. The major factors that influenced the conceptual and detailed design phases of the project included human factors, design standards, safety regulations, static and dynamic loading conditions, and structural response.

Team photo – Four Flags



From left to right: Graeme Milligan, Peter Loudfoot, , James St. Onge, Stephen Phillips

Title: Civil/Environmental/Geological Capstone Design Project List – 2016

Project type: Civil

Project Title: Demand Responsive Transit in the Region of Waterloo

Team members: Paul Buning, Shawn (Jae-Hung) Byun, Xi (Jenny) Chen, Theyonas Manoharan

Team Name: DTE Ltd

Project Description:

The Region of Waterloo is increasing in population and as a result the Region has decided to implement a Light Rail Transit (LRT). The proposed LRT connects the north to the south ends of the Region and lacks the lateral east-west connection. Dream Team Engineering (DTE) Limited is designing a Demand Responsive Transit (DRT) system to provide better transit connections to the LRT line for residents on the east and west ends of the Region.

Team logo –



Dream Team Engineering Limited

Project type: Civil

Project Title: University of Waterloo's Proactive Cycling Plan

Team Members: Brittany Chung, Andrew Fox, Jiwon Choi, Roy Kim

Team Name: EngCycle Consulting Ltd

Project Description:

The University of Waterloo has been experiencing rising demands for parking spaces recently and fears that they soon will not be able to accommodate these demands. As opposed to investing in additional parking infrastructure, the University would like to encourage active transportation. EngCycle Consulting Ltd. has conducted transportation studies and are looking into potential improvements for the campus' cycling infrastructure to attract cyclists. Some of the improvements include adding segregated bicycle routes through campus and designing new bicycle storage facilities to deter theft.

Team photo -

Project type: EnvE

Project Title: Process and Detailed Design for an Anaerobic Digestion System for Agricultural Food Waste Streams

Team Members: Darrell Cheng, Ian Mercer, Tim Yoon, Iouri Basmanov, Sian Smart

Team Name:

Project Description:

This project originated with the idea of providing small famers with an appropriately-scaled technology for them to increase their ability to become energetically self-sustainable through utilizing their waste-crop yields. Through the process of anaerobic decomposition, benefits such as energy return, expedited fertilization and reduced greenhouse gas emissions can be met, turning what was previously thought of as waste into a valuable resource. A detailed design for the physical reactor and process reaction will provide insight on the feasibility of achieving these goals.

Team photo-

Project type: EnvE

Project Title: Carlsbad Desalination Plant - Desalination Brine Water Disposal and Treatment Technology

Team Members: Sara Abu-Obaid, Dilshad Mondegarian, Shalabha Kalliath, and Clara Weber

Team Name: SSDC Consultants

Project Description:

The Carlsbad desalination plant is the largest plant of its kind in the United States. Located in California, it was built to treat 100 MGD of seawater at 50% efficiency using reverse osmosis membranes. The current plan is to use cooling water from a power plant to dilute brine prior to its discharge into the Pacific Ocean. Due to the closing of the power plant in 2017, this project aims to assess and design a new alternative for water intake, brine dilution, and discharge.

Team photo-

Project type: EnvE

Project Title: Data Analysis and User Interface for Mobile Air Monitoring Devices

Team Members: Nina Feng, Reenste Filler, Yang Li, Filzah Nasir

Team Name: HYFR Environmental

Project Description:

The AirLogix application consists of two components: an affordable mobile monitoring device, and user-friendly data analysis software. The objective of Airlogix is to address the need for a low cost data analysis and visualization tool for air quality data. Because of the increased concerns about air quality, there are many communities located near industrialized areas with concerns about air quality and impacts on public health. AirLogix aims to allow citizen scientists to conduct air quality assessments in their communities.



Team Logo: **ENVIRONMENTAL**

Project type: ENVE

Project Name: Optimization and Utilization of Energy from Anaerobic Digestion and Incineration Process at Duffin Creek Water Pollution Control Plant

Team Members: Konhee Lee, Qixia Zhang, John Ryue, Xuewen He

Team Name:

Project Description: As part of Water Environment Association Ontario's 2016 Student Design Contest, studies and designs were conducted on The Duffin Creek Water Pollution Control Plant to meet four objectives:

- 1) Optimization of biogas production,
- 2) Utilization of biogas for additional energy recovery, and
- 3) Additional energy recovery from the existing incineration process
- 4) Identification of additional resource recovery potential

Project type: EnvE

Project Name: Atherley Narrows Channel Modelling and Redesign

Team Members: Morgan Crane, Farouk Abu-Hijleh, Justin Tayles

Team Name: Das Haus Engineering Ltd

Project Description:

This project determines the feasibility of extending the boating season of Lake Couchiching through the modification of the Atherley Narrows. Currently, the Atherley Narrows acts as a choke point restricting the flow that enters Lake Couchiching. The modification of this channel will increase the conveyance enabling the homeowners living on and around Lake Couchiching to use the lake longer into the summer. The design will make use of 1D modeling of the channel and overall system to determine the extension to the boating season.

Team photo -

Project type: EnvE

Project Title: Preliminary Design for Elgin Area Drinking Water Treatment Plant Retrofit for Microcystin

Team Members: Amy Yang, Carlos Manzo, Gunjan Desai, Howard Tong

Team Name: GACH Ltd

Project Description:

Lake Erie has had a recurring problem of Harmful Algal Blooms (HABs) due to excess nutrient loadings and many other factors. The algae (cyanobacteria) can produce microcystin-LR, a type of cyanotoxin that can be harmful to drinking water users in high concentrations. Microcystin-LR is also regulated by Ontario Drinking Water Standards. As the Elgin drinking water treatment plant currently intakes its water from Lake Erie, there is interest in how the plant may be retrofitted to treat high concentrations of microcystin-LR should a HAB occur.

Team photo -

Project type: GeoE

Project Title: Evaluation of assets, Mine Quebecois

Team Members: Aldo Katragjini, Graham Karner, Jonathan Lum

Team Name: JAG Consultants

Project Description:

We assess the pre-feasibility of extending the lifetime for a Nickel mine operating in Northern Quebec. The current mine extracts and processes ore from open pit operations. Exploration efforts by the client have targeted two areas of interest in the vicinity. We examine borehole and assay data to focus exploratory efforts to a single site and provide an assessment for economic viability of the in-situ mineralization. Conclusions are drawn based on requirements for support, excavations, infrastructure, monitoring equipment and overall extraction costs.

Team Logo:

Project type: EnvE

Project Title: The Reuse of Treated Wastewater for Crop Irrigation in Central California

Team Members: Brittany Demmer, Christian Larsen, Kristina Lee, Tim Rodgers

Team Name: LLDR Ltd

Project Description:

The on-going draught and substantial agriculture sector in California has placed a significant strain on water availability throughout the state. In response to this, the State of California and other jurisdictions experiencing this issue, are looking to water reuse to satisfy water needs. Public health is a major concern in the reuse of wastewater as pathogens are present in potentially harmful concentrations. Our team aims to formulate a feasible system to treat secondary-treated municipal wastewater for crop irrigation with the goal of effective pathogen removal.

Team photo



Left to Right: Christian Larsen, Kristina Lee, Brittany Demmer, Tim Rodgers

Project type: EnvE/GeoE **Project Title:** The Great CleanUp

Team Members: Natalie Wennyk, Farmin Zaman, Zach Schenk, Reginald Franklin

Team Name: Solid Solutions

Project Description:

The objective of The Great Cleanup project is to determine an effective system to match The Ocean Cleanup projects goal in Lake Erie, by removing 40% of plastics over a 10 year span. The final design for the buoy net system will consist of a specific buoy arrangement where the geometry, dimensions and orientation are optimized to ensure that a maximum amount of plastics are captured at the lowest possible cost. This design will have to account for the variances in current direction and velocities.

Team photo -

Project type: EnvE **Project Title:** Fishway Passage Design for Non-Jumping Species for Streetsville Dam, Mississauga, Ontario

Team Members: Jason Knight, Michelle Ng, Noel Tse and Wayne Zhu

Team Name: NWMJ Consulting Group Ltd.

Project Description:

This project intends to provide the client with a retrofit design solution to allow both jumping and non-jumping fish species to travel upstream of the Streetsville dam, located on the Credit River in Mississauga, Ontario. This will biologically diversify the aquatic species present upstream and provide species with a larger habitat. This project also intends to maintain a secondary function of the fishway to prevent sea lamprey, an invasive species, from travelling upstream of the dam.

Team photo -

Project type: GeoE

Project Title: Optimizing fracture complexity of a hydraulic fracturing well in the Kaybob area

Team Members: Hongyuan Zhou, Julian Chen, Linhan Chen

Team Name: Frac Dealers Ltd

Project Description:

Hydraulic fracturing wells are set up and operated in a field often with minimal research and relies overwhelmingly on empirical data. This project attempts to optimize various aspects of the construction of a hydraulic fracturing well in the Kaybob area of Alberta utilizing the numerical simulation software UDEC™ and optimization software in conjunction with empirical data. Phase 1 was focused on optimal viscosity and flow rate, while phase 2 focused on fracture depth, spacing, injection time, and injection duration.

Team Logo: Frac Dealers Ltd.



Project type: GeoE

Project Title: Reinstatement of the Mount Polley Tailings Dam Facility

Team Members: Jordan Vizirtzoglou, Stephane Belanger, Jason Sparks, Nathaniel Hargraves

Team Name:

Project Description:

Mount Polley Mine, located in central British Columbia, experienced a tailings dam failure in August 2014. Since then the mine has been operating at reduced capacity. SNJ² Consultants has been tasked with reinstating containment and operation of the TSF. The first phase of the project entailed the design of a tailings dam patch to be constructed directly in the breach, achieving full pond containment. The second phase involves a full impoundment strengthening design in order to conform to British Columbia's newly instated dam safety regulations.